How To Use Data Analytics to Improve Management Decision Making and Enhanced Care Delivery

Catherine Aspiras, MFT
Associate Director

Eleanor Castillo Sumi, Ph.D., BCBA-D
VP, Research & Program Development
OBJECTIVES

Agency overview

Demonstration
- How technology can be used to configure reports through data visualization so they are clear and useful
- Ways to present reports effectively and provide innovatively with data that stimulates quality improvement in clinical care and organizational leadership
- How outcome data can be used to demonstrate value within a payment model of value-based services

Change Management
- Lessons Learned and Value-Add

Questions and Answers
AGENCY OVERVIEW
## OUR MISSION AND VISION

<table>
<thead>
<tr>
<th>Mission</th>
<th>Vision</th>
</tr>
</thead>
<tbody>
<tr>
<td>We do whatever it takes to strengthen and advocate for <em>children, families, adults, and communities</em> to realize their hopes for behavioral health and well-being.</td>
<td>To be trusted leaders in providing innovative care for complex behavioral health and social service needs</td>
</tr>
</tbody>
</table>
1867 Eastfield is founded

1874 Ming Quong is founded

1880 Hollygrove is founded

1958 Happy Dragon Thrift Shop (Auxiliary) opens

1967 The Butter Paddle (Auxiliary) opens

1970 Jerry Doyle becomes CEO

1987 Eastfield and Ming Quong merge

1993 Unicorn Thrift Shop (Auxiliary) opens

1994 Our agency launches California’s first Wraparound program

2004 Jerry Doyle chairs the subcommittee that writes the children’s portion of the Mental Health Services Act (Prop 63)

2006 Los Angeles-based Hollygrove and EMQ merge

2009 Davis-based FamiliesFirst and EMQ merge

2016 EMQ FamiliesFirst becomes Uplift Family Services

2017 Uplift Family Services celebrates 150 year anniversary
# SERVICES WE PROVIDE

<table>
<thead>
<tr>
<th>Service Levels</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intensive Behavioral Health</td>
<td>❑ Primarily based on Wraparound principles &amp; practices (e.g., CFT)</td>
</tr>
<tr>
<td></td>
<td>❑ Largely funded by Medi-Cal (SB946) or MHSA (Full partnership)</td>
</tr>
<tr>
<td></td>
<td>❑ High frequency (several days/week) and intensive (several hours/day)</td>
</tr>
<tr>
<td></td>
<td>❑ Multiple systems and staff involvement</td>
</tr>
<tr>
<td></td>
<td>❑ Goal: Prevent more restrictive level of care or step-down from higher level of care</td>
</tr>
</tbody>
</table>
## SERVICES WE PROVIDE

<table>
<thead>
<tr>
<th>Service Levels</th>
<th>Description</th>
</tr>
</thead>
</table>
| Community/Clinic Based- Outpatient | - Largely funded by Medi-Cal (SB946)  
- Less intensive- lower frequency and intensity (several hours/day)  
- Less likely to be involved in multiple systems  
- Goal: Symptom reduction and increased functioning within current living situation |
| Health Insurance                | - Services funded by health plans.  
- Primarily Autism services (Applied Behavior Analysis)  
- Highly individualized intensive services (6-24 hours per week depending on an individual’s age and level of functioning) |
## SERVICES WE PROVIDE

<table>
<thead>
<tr>
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</tr>
</thead>
</table>
| Community Wellness   | - Primarily funded by the private sector and grants.  
                          - Community resources- mental health presentations, trainings, and activities for youth and their families |
| Health Insurance     | - Services funded by health plans.  
                          - Primarily Autism services (Applied Behavior Analysis)  
                          - Highly individualized intensive services (6-24 hours per week depending on an individual’s age and level of functioning) |
| Crisis               | - For youth with imminent mental health needs and may be a danger to themselves or others  
                          - Mobile, Crisis Stabilization, Community Transition |
# SERVICES WE PROVIDE

<table>
<thead>
<tr>
<th>Service Levels</th>
<th>Description</th>
</tr>
</thead>
</table>
| Education Based                 | ❑ Services delivered in a school setting (most often within a multi-tiered support system structure)  
                                       ❑ Funded by Education or Mental/Behavioral Health  |
| Foster Care and Adoptions       | ❑ Services funded by the Dept of Social Services  
                                       ❑ Focused on foster care placements and/or adoptions.  
                                       ❑ May be independent services of a component of a larger program |
WHO WE SERVE
AGENCY ASSOCIATES AND FINANCIAL STATUS

Revenue Distribution
- Government Grants: 89%
- Fee for Service: 2%
- Fundraising: 4%
- Other Income: 5%

Associates
- N = 1387
- Clinical: 80%
- Non-Clinical: 20%
Vision

Strategic Focus:
Internal Operation, Financial, Market, Foundation

Strategic Objectives

Key Performance Indicators (KPI)
## DATA FLOW

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Action Plan</th>
<th>PWEBS</th>
<th>Progress Notes</th>
<th>Intervention Dashboard</th>
</tr>
</thead>
<tbody>
<tr>
<td>CANS</td>
<td>Family Vision &amp; Shared</td>
<td>Library of interventions which will include Core Elements/MAP</td>
<td>Based on selected interventions and SMART goals</td>
<td>&quot;Core elements&quot; dashboard</td>
</tr>
<tr>
<td></td>
<td>Understanding</td>
<td>interventions</td>
<td></td>
<td>Graphic display of progress</td>
</tr>
<tr>
<td>CEDE</td>
<td>Incorporates child/family</td>
<td></td>
<td></td>
<td>By staff</td>
</tr>
<tr>
<td>Biopsychosocial</td>
<td>strengths</td>
<td></td>
<td></td>
<td>By program</td>
</tr>
<tr>
<td>FBA</td>
<td>SMART goals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cultural discovery</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Substance Use</td>
<td>Based on CANS and FBA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Functioning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes**: Based on selected interventions and SMART goals.

**Dashboard**: "Core elements" dashboard, Graphic display of progress, By staff, By program.
### Appendix B: Demographic and Intake Data

#### Table 1: Number of Youth Served

<table>
<thead>
<tr>
<th>Number of Youth Served</th>
<th>FY17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Youth as of 06/30/17</td>
<td>94</td>
</tr>
<tr>
<td>Youth Admitted in FY17</td>
<td>127</td>
</tr>
<tr>
<td>Youth Discharged in FY17</td>
<td>114</td>
</tr>
<tr>
<td>Youth Discharged in FY17 with LOS greater than 60 days*</td>
<td>96</td>
</tr>
<tr>
<td>Total Youth Served Unduplicated</td>
<td>196</td>
</tr>
<tr>
<td>Total Youth Served</td>
<td>208</td>
</tr>
</tbody>
</table>

*Excludes youth discharged with a LOS greater than 60 days.

Source: TIER Masterfile Extract 07/28/17. Note: (1) Outcomes only include youth discharged with a LOS greater than 60 days.

#### Table 2: Age at Program Entry of Youth Admitted in FY17

<table>
<thead>
<tr>
<th>Age Range</th>
<th>FY17 (N=127)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 5</td>
<td>10 (8%)</td>
</tr>
<tr>
<td>6 to 10</td>
<td>23 (18%)</td>
</tr>
<tr>
<td>11 to 13</td>
<td>28 (22%)</td>
</tr>
<tr>
<td>14 to 17</td>
<td>64 (51%)</td>
</tr>
<tr>
<td>18 to 25</td>
<td>1 (1%)</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td><strong>3.20-20.10</strong></td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td>13.04</td>
</tr>
<tr>
<td><strong>Median</strong></td>
<td>14.14</td>
</tr>
</tbody>
</table>

Source: TIER Masterfile Extract 07/28/17. Note: Missing data for 1 youth.

#### Improved Parent Functioning

To assess parent’s ability to provide daily care of their youth, Uplift Family Services utilizes the CANS, specifically the Caregiver Strengths and Needs domain. This domain refers to the parent’s needs as well as the parent’s strengths in which he/she can be a resource for the youth. It is our goal that 50% of caregivers will improve on at least 60% of their CGSN actionable items. Improvement is defined as an actionable rating (2.3) to Admit to a non-actionable (0.1) at Discharge. In addition, it is our goal that 50% of parents will improve on maintaining safety for their youth and improve their development of a natural support system. In FY17, Uplift Family Services Fresno County Wraparound exceeded the CGSN domain goal by 24% and the CGSN Social Resources goal by 21%.

![Improvement in Parent Functioning](image_url)

Source: CANS La. (07/14/17). Notes: (1) FY17 CGSN Domain (N=28), CGSN Safety (N=28), and CGSN Social Resources (N=28). (2) CANS item: number of youth with an actionable rating at Admit; number of youth improved to non-actionable at Discharge. (3) CANS domain and total. (4) Number of youth with paired data; no number of youth improving on at least 60% of actionable items. (5) CANS Social Resources missing data for 3 youth.
CHANGE MANAGEMENT TO A CULTURE OF DATA ANALYTICS
DATA WORKFLOW CURRENT

Current Process

Data Abstraction
- Includes: Demographics
  - CANS
  - CEDE

Data Manipulation
- Outcome Measures:
  - YOQ/YOQRSR/OQ
  - PSI
  - UCLA PTSD
  - CBCL
  - PHQ-9
  - ECHR/GESHI
  - ASQ
  - KIPS
  - YES

Analysis Presentation
- Outcome Measures:
  - YOQ/YOQRSR/OQ
  - PSI
  - UCLA PTSD
  - CBCL
  - PHQ-9
  - ECHR/GESHI
  - ASQ
  - KIPS
  - YES

- Internal:
  - Executive Leadership
  - Shared Support Services
  - Directors
  - Board
  - County

- External:
  - ECHO
  - TIER
  - Welligent

SPSS

Uplift Family Services
DATA WORKFLOW PROPOSED

Proposed Process

Data Manipulation
- Includes:
  - Demographics
  - CANS
  - CEDE
- Outcome Measures:
  - YOQ/YOQSR/OQ
  - PSI
  - UCLA PTSD
  - CBCL
  - PHQ-9
  - ECBI/SESBI
  - SDQ
  - ASQ
  - RCADS
  - KIPS

Proposed Workflow:
- ECHO
- TIER
- Welligent
- SPSS

Outcome Measures:
- WFI
- YSS
- CSQ-3

Internal:
- Shared Support Serv-
- Internal: Executive Leadership
- Internal: Program

External:
- Directors
- Reports
- Conference

Tableau Server
Browser/Tablet
IMPLEMENTATION SCIENCE FRAMEWORK

Exploration and Adoption – Identifying the need for change, learning about possible interventions that may provide solutions, learning about what it takes to implement the innovation effectively, developing stakeholders and champions, assessing and creating readiness for change, and deciding to proceed (or not)

Installation/Pre-Implementation – Establishing the resources needed to use an innovation and the resources required to implement the innovation as intended

Initial Implementation – First use of an innovation by users that are just learning how to support the new ways of work

Full Implementation – Skillful use of an innovation that is well-integrated into the repertoire of the department and agency and routinely and effectively supported by successive building

Sustainability and Innovation
IMPLEMENTATION SCIENCE FRAMEWORK: DRIVERS

Key components of capacity and the functional infrastructure supports that enable success.

3 Categories of Drivers:

**Competency** - Coaching, Training, Selection

**Organization**
- **Systems Intervention** - Changes in healthcare environment (value-based services)
- **Facilitation Administration** - Internal processes, policies, structures
- **Decision Support/Data** - System for identifying, collecting, and analyzing reliable data in a timely manner

**Leadership** - Technical, Adaptive
PHASE 1: EXPLORATION AND ADOPTION

Agency culture
- Silos- between and within regions
- Access of data primarily through O&E and IT
- Pull vs push information

Tested and assessed other options
- Data Extract Warehouse- Internal database built in Access
- Microsoft Business Intelligence
- Oracle Data Visualization
- Tableau
PHASE 2: INSTALLATION/PRE-IMPLEMENTATION

Establishing the resources needed to use an innovation and the resources required to implement the innovation as intended

Tableau training for staff intermediate and advanced Research Assistants
  • Pro bono consultation hours

Revised job descriptions and reallocate staffing focus
PHASE 3: INITIAL IMPLEMENTATION

Building competency

- External supports
- Consultation with expert Tableau-user organization and Tableau
- Limited Tableau user licenses
- Tested within O&E with a simple report: Board report to get buy-in at a high level
- Limited access to only senior level management due to security measures

- Expanded access to mid-level managers as requested by each Regional Executive Director
- Expanded dashboards to include Compliance Reports (agencywide) and specific program requests (expansion of access to data)
- Expanded initial Board report to include more data points
PHASE 4: FULL IMPLEMENTATION

Skillful use of an innovation that is well-integrated into the repertoire of the business and routinely and effectively supported by successive building and the agency’s leaders

Data warehouse
- Centralize data from multiple sources
- Security
- Increased access

Increased budget
LESSONS LEARNED AND VALUE-ADD
AGENCY-WIDE LESSONS

 Messing: Alignment with the strategic vision

 Budget
  - “Hidden Cost” (staff) vs actual cost to purchase products

 Know your audience
  - Board vs Executive Team vs Operations

 Change management
  - Change is a process that happens in stages; it is not an event
  - 3-5 years for a culture change
  - Using data is a skill to learn across all levels and requires change management
  - Set a culture of talking about the data in a non-judgmental manner
  - Designate a forum to address these issues to increase accountability within the process vs assign blame

 Be prepared to act on the information
  - Illustration of trends
  - Highlighted items and issues that were not visible with paper format
DEPARTMENT LESSONS

- Continual assess department needs for fit and feasibility of implementing
  - Balancing staff growth opportunities and need to restructure
  - Training and refined training to match skills and job expectations
  - Consultations from experts
  - Revised job descriptions

- PERSISTENCE!
  - Taken 3 years to show the value of a data visualization tool

Strong partnership and collaboration between IT & O&E

“Pilot” the process to demonstrate value

Plan-Do-Study-Act cycles and rapid-cycling of process
AGENCY-WIDE GAINS

- More productive conversation about what the data means
- Deeper appreciation for what data can do and how it can be used
- Improved process for reporting data into a single dashboard
DEPARTMENT GAINS

Increased capacity within the Outcomes Department

- Efficiency - Streamlined process for reporting
- Effective reporting of outcomes
- Ability to provide “non-mandated” information to programs for quality review
- Manual reports that took hours to draft and would take multiple hours to modify per county or programs’ request
O&E AT MAXIMUM CAPACITY WHILE DEMANDS INCREASE

- FCAS Redesign/CCR Reform
- More and more counties are requesting for post-discharge studies as part of their RFP
- State-mandate for CANS and PSC-35 data effective July 1, 2018

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th># of Youth Served</th>
<th># FTE needed to fully support programs (1:400)</th>
<th>Budgeted FTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>8166</td>
<td>20.4</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>8702</td>
<td>21.75</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>8307</td>
<td>20.77</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>9902</td>
<td>24.75</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>11,370</td>
<td>28.43</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>12,467</td>
<td>31.19</td>
<td>13.5</td>
</tr>
<tr>
<td>18</td>
<td>Projection: 14,700</td>
<td></td>
<td>13.38</td>
</tr>
<tr>
<td>19</td>
<td></td>
<td></td>
<td>12.8</td>
</tr>
</tbody>
</table>
COST SAVINGS EXAMPLE: O&E

Current process and capacity per annual report

- 80 basic program reports – demographics, CANS, CEDE, Satisfaction, WFI
- 7 bi-annual as required by the county,
- 5 annual regional reports,
- 20 Quarterly Regional IR reports,
- Quarterly compliance dashboard (includes 9 departments),
- 70 CPS Completion Rate reports 2x/year
- 87 Outcome Measure (WFI, Post Discharge, Satisfaction at Discharge)
- Annual Completion Rate reports

Figure above excludes routine quarterly and monthly reports required by the county (e.g., items not in Tableau- e.g., YOQ)

Supplemental program reports (e.g., ASQ, YOQ, ECBI, UCLA PTSD, etc. outcomes) in addition to basic program reports as required by counties

- Fresno Wrap Monthly Report
- Fresno HOPE Monthly Report
- SCC Matrix and UPLIFT Monthly
- SCC Matrix and UPLIFT Quarterly Report
- SCC First Five Quarterly Report
- SCC CSU Quarterly Recidivism Report
- SAC County Quarterly Reports (FIT, Wrap, TBS)
- SAC TBS Monthly Report
- SCC Monthly IR Report
- Solano ECMH Quarterly Report
COST SAVINGS EXAMPLE:  O&E

Manual (Word) version for current processes = $138,110.40- fully loaded labor cost; with an average cost of $20/hr+38% benefits

Tableau version $50,011.20

Cost Savings = $88,099.20